

AMENDMENTS TO THE CLAIMS

1. (currently amended) A cryogenic fuel tank assembly comprising:
a cryogenic fuel tank wall;
a foam assembly affixed to said cryogenic fuel tank wall, said foam assembly having an inner surface and an outer surface;
a first solid film directly bonded to said outer surface to provide a uniform outer bonding surface ~~with improved bond strength~~; and
a semi-rigid thermal protection system assembly bonded to said uniform outer bonding surface.
2. (original) A cryogenic fuel tank assembly as described in claim 1, wherein said foam assembly comprises a polyimide foam layer.
3. (previously amended) A cryogenic fuel tank assembly as described in claim 2, wherein said foam assembly further comprises a polyurethane foam layer applied inboard of said polyimide foam layer.
4. (original) A cryogenic fuel tank assembly as described in claim 1, wherein said foam assembly comprises a polyurethane foam layer.
5. (previously amended) A cryogenic fuel tank assembly as described in claim 1, further comprising:
a honeycomb core positioned within said foam assembly, said honeycomb core providing a structural base for said foam assembly.
6. (original) A cryogenic fuel tank assembly as described in claim 1, further comprising:

a silicon adhesive layer bonding said thermal protection system to said first solid film.

7. (original) A cryogenic fuel tank assembly as described in claim 1, further comprising:

a polyurethane adhesive layer bonding said foam assembly to said cryogenic fuel tank wall.

8. (currently amended) A cryogenic fuel tank assembly as described in claim 1, further comprising:

a second solid film layer bonded to said inner surface to provide a uniform inner bonding surface, said uniform inner bonding surface bonded to said cryogenic tank wall ~~for providing improved bond strength between the foam assembly and the fuel tank wall.~~

9. (previously amended) A cryogenic fuel tank assembly as described in claim 1, wherein said uniform outer bonding surface further comprises:

a first fabric layer applied to said first solid film, said first fabric layer improving impact resistance of said cryogenic fuel tank wall and generating an additional barrier for particles that may have penetrated the thermal protection system.

10. (original) A cryogenic fuel tank assembly as described in claim 9, wherein said first fabric layer comprises a glass fabric.

11. (currently amended) A reusable launch vehicle assembly comprising:
a cryogenic fuel tank including at least one cryogenic fuel tank wall;
a foam assembly affixed to said cryogenic fuel tank wall, said foam assembly having an inner surface and an outer surface;
a honeycomb core positioned within said foam assembly;

a first solid film directly bonded to said outer surface to provide a uniform outer bonding surface to provide a uniform outer bonding surface ~~and improved bond strength~~;
and

a semi-rigid thermal protection system assembly bonded to said uniform outer bonding surface.

12. (previously amended) A reusable launch vehicle assembly as described in claim 11, further comprising:

a first fabric layer applied to said first solid film, said first fabric layer improving impact resistance of said cryogenic fuel tank wall and generating an additional barrier for particles that may have penetrated the thermal protection system.

13. (original) A reusable launch vehicle assembly as described in claim 11, further comprising:

a second solid film bonded to said inner surface to provide a uniform inner bonding surface, said uniform inner bonding surface bonded to said cryogenic tank wall.

14. (original) A reusable launch vehicle assembly as described in claim 13, further comprising:

a second fabric layer applied to said second solid film, said second fabric layer improving impact resistance of said cryogenic fuel tank wall.

15. (previously amended) A thermally protected fuel tank assembly comprising:

a fuel tank wall;

a foam assembly affixed to said fuel tank wall, said foam assembly having an inner surface and an outer surface;

a first fabric layer directly bonded to said outer surface to provide a uniform outer bonding surface; and

a semi-rigid thermal protection system assembly bonded to said uniform outer bonding surface.

16. (original) A thermally protected fuel tank assembly as described in claim 15, wherein said foam assembly comprises a polyimide foam layer.

17. (previously amended) A thermally protected fuel tank assembly as described in claim 16, wherein said foam assembly further comprises a polyurethane foam layer applied inboard of said polyimide foam layer.

18. (previously amended) A thermally protected fuel tank assembly as described in claim 15, further comprising:

a honeycomb core positioned within said foam assembly, said honeycomb core providing a structural base for said foam assembly.

19. (original) A thermally protected fuel tank assembly as described in claim 15, further comprising:

a silicon adhesive layer bonding said thermal protection system to said first fabric layer.

20. (original) A thermally protected fuel tank assembly as described in claim 15, further comprising:

a second fabric layer bonded to said inner surface to provide a uniform inner bonding surface, said uniform inner bonding surface bonded to said cryogenic tank wall.

21. (original) A thermally protected fuel tank assembly as described in claim 15, wherein said uniform outer bonding surface further comprises:

a first solid film applied to said first fabric layer.

22. (original) A thermally protected fuel tank assembly as described in claim 20, wherein said uniform outer bonding surface further comprises:

a second solid film applied to said second fabric layer.

23-27 (canceled).